



Story Ideas

ABALONE

Abalone Research Going High-Tech

Marine scientists from DFG, academic institutes, and nongovernmental organizations are now using high-tech remotely operated vehicles, scuba, and submarine technology for research on the newly listed (endangered) white abalone, the candidate black abalone, and other threatened species. Along the North Coast of California, there is ongoing research on density studies, stock assessment, size frequency distributions, and habitat characterization of the red abalone. DFG is also continuing the “creel survey,” a 25-year collection of information on the recreational abalone fishery.

Biologists from DFG are currently working with abalone experts from around the world to write a fishery management and recovery plan for abalone in California.

CALIFORNIA SEA OTTERS

California Sea Otters Serve as a Sentinel of Marine Ecosystem Health

California sea otters are currently listed as threatened under the Endangered Species Act. In the late 1990s, the sea otter population declined after several years of growth. Range-wide population counts now hover between 2,220 and 2,300 individuals. The cause of the decline may have implications for the health and sustainability of nearshore marine ecosystems.

The DFG’s Marine Wildlife Veterinary Care and Research Center (MWRDC) does cooperative research on sea otter biology and diseases, and uses the data it collects as an indicator for marine ecosystem health. Working with the USGS/BRD, UC Santa Cruz, UC Davis, and the Monterey Bay Aquarium, a suite of research studies address questions of foraging ecology, distribution and abundance, contaminant and disease exposure, and causes of mortality related to human activity.

A small number sea otters lives at the MWRDC as part of the university-based non-invasive research projects. In addition, the MWRDC examines dead sea otters, marine mammals, and birds to determine causes of death.

FISH and FISHING

Witness One of Nature’s Most Spectacular Sights - Grunion Spawning!

Considered by some to be the ocean’s equivalent of a “snipe hunt,” California grunion are real and the stories you may have heard about grunion runs are true. On nights with the highest tides from March through September, grunion come ashore on sandy beaches in Southern California to spawn. Female grunions insert themselves in

the sand, tail first, in an upright position, while the surrounding males attempt to fertilize the eggs she deposits. To learn more about the life history of these amazing little fish, visit the DFG's Web site at: www.dfg.ca.gov/mrd/grnindx3.html. Also, the DFG provides a schedule of predicted grunion runs that are available online at: www.dfg.ca.gov/mrd/gruschd.html.

FISHERIES MANAGEMENT

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RESEARCH and SCIENCE

Underwater Studies Document the Effectiveness of Protected Areas

The state's effort to revise and expand its system of Marine Protected Areas is a complex and politically difficult one. Political concerns aside, how do we measure the affect of a fishing closure on fish species? How quickly do they recover? See how biologists design studies, and gather data underwater to interpret the effects of fishing on a long-lived, slow growing family of popular sport and commercially caught fish.

Cutting-Edge Network of Underwater Observation "Sites"

Scientists are developing a cutting-edge network of underwater observation sites to allow monitoring of changes over broad areas. Rather than relying exclusively on fishermen's logs, this program relies on divers and remotely operated vehicles to give a picture of what's going on in the oceans. The network will involve a wide range of scientists and institutions, including University of California and State University campuses.

Geographic Information Systems and Remote Sensing Technology

Marine research has come of age with a variety of new technologies designed to help biologists and resource managers understand marine ecosystems. Remote sensing includes satellite-based imagery, digital aerial photography, underwater sonar, and multi-beam bathymetry tools. Geographic Information Systems, known as GIS, is a powerful computer-based analysis tool that interprets remotely-sensed data across both time and space. DFG's Marine Region has developed one of the most sophisticated GIS and Remote Sensing labs along the California coast. This lab links its data retrieval and analysis to marine projects being conducted by 10 coastal agencies and educational institutions.

Rockfish Older Than My Grandmother?

Rockfishes of the genus *Sebastodes* comprise one of the most economically important groups of commercial and recreational fishes off the California coast. Biologically

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diverse, rockfish are found on various types of substrate including rocky bottom, siltstone, shale, sand, and mud ranging from intertidal areas to over 2,400 feet depths. Research has shown that they are residential, long-lived, and have lengthy juvenile life stages. Aging studies show many of these fishes may well out-live their human counterparts!

SEABIRDS

California Plays Roost to More Than 100 Species of Marine Birds

California is the home and migratory stop to more than 100 species of seabirds. These seabirds, including several endangered and threatened species, roost along the California coast on offshore islands and pinnacles, and within bays and estuaries. With an increasing number of Californians and tourists engaging in activities along the coast, many nesting areas are becoming damaged due to human impacts. DFG is involved with seabird research and actively serves on many advisory committees with various agencies, educational institutions, and environmental groups.

SHARKS

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SQUID

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UNUSUAL FISH

Ever Wondered What Kind of Fish You've Caught? Just Ask Dr. Lea!

When it comes to rare finds or reports of shark/human interaction, Dr. Robert Lea is the central contact for scientists and fishermen. Dr. Lea keeps current up-to-date records on various unusual fishes that have been found or reported in waters from Alaska to Baja. Dr. Lea specializes in identifying fish species that are reported or caught during unusual oceanographic phenomena, such as upwelling or El Niño events. He has a background in systematics and zoogeography and is always a wealth of information on California's marine resources.

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PUBLICATIONS

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PUBLIC EVENTS

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